

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the Application:

LISTING OF CLAIMS:

Claims 1 – 5 (Cancelled)

6. (Currently Amended) A method for controlling a fuel cell system ~~comprising~~ including a fuel cell stack, an air pumping device and a hydrogen supply device, both coupled to the fuel cell stack to supply the air and hydrogen thereto, respectively, and a hydrogen exhaust valve coupled to the fuel cell stack for relief of the hydrogen therefrom, the method comprising the ~~following~~ following steps of:

- (1) initiating a ~~star-up~~ start-up routing routine to start supply of the air and hydrogen to the fuel cell stack through an air supply conduit and a hydrogen supply conduit, respectively;
- (2) detecting hydrogen pressure inside the hydrogen supply conduit;
- (3) based on the detected hydrogen pressure, selectively opening/closing a hydrogen valve mounted to the hydrogen supply conduit for controlling hydrogen flow rate through the hydrogen supply conduit;
- (4) detecting output voltage and current of the fuel cell stack; and

(5) ~~based on the detected current~~, selectively driving ~~an~~ the air pumping device mounted to the air supply conduit, in a pulse width modulated manner, for controlling air flow rate through the air supply conduit in accordance with the detected output voltage of said fuel cell stack,

wherein, when the detected output voltage is lower than a preset lower voltage level indicative of a presence of an unwanted liquid accumulated in the fuel cell stack,

controlling the air pumping device to increase the air flow in the air supply conduit to a maximum air flow rate to thereby remove unwanted liquid accumulated in said fuel cell stack,

maintaining said maximum air flow rate during a first predetermined period of time, and

controlling the air pumping device to resume to a normal flow rate upon said first predetermined period of time is over.

7. (Currently Amended) The method as claimed in Claim 6, wherein the start-up ~~routing~~ routine comprises the ~~following~~ steps of:

(a) opening the hydrogen valve to ~~cause~~ supply the hydrogen flow to the fuel cell stack;

(b) actuating the air pumping device to supply a maximum flow rate of air to the fuel cell stack for a first given period of time, thereby removing residual liquid accumulated in said fuel cell stack;

(c) reducing the air flow to a minimum air flow rate; and

~~(e)~~ (d) controlling the air pumping device to supply the air in a at the minimum air flow rate to the fuel cell stack.

8. (Currently Amended) The method as claimed in Claim 7, further comprising a step ~~for~~ of:

opening the hydrogen exhaust valve for a second given period of time, ~~in order to expel~~ thereby expelling impure gasses out of the fuel cell stack and the hydrogen supply conduit.

9. (Currently Amended) the method as claimed in Claim 6, further comprising a step of:

controlling temperature of the fuel cell stack within a preset range.

10. (Currently Amended) The method as claimed in Claim 6, wherein the selective opening/closing operation of the hydrogen valve is ~~done with~~ performed using a pulse signal.

11. (Currently Amended) The method as claimed in Claim 6, wherein the control of air flow rate comprises the steps of:

- (a) setting the air flow rate to a minimum level when an output current of the fuel cell stack is smaller than a lower limit;
- (b) setting the air flow rate to three times of a required level in accordance with the output current when the output current is greater than the lower limit but smaller than an upper limit; and
- (c) setting the air flow rate to a maximum level when the output current is greater than the upper limit.

Claim 12 (Cancelled)

13. (Currently Amended) The method as claimed in Claim ~~12~~ 1, further comprising the step of:

shutting down the fuel cell system when the output voltage of the fuel cell stack is below a preset safety threshold level of the output voltage.

14. (New) The method as claimed in Claim 6, further comprising the step of: simultaneously opening said hydrogen exhaust valve when controlling the air pumping device to increase the air flow in the air supply conduit to a maximum air flow rate in said step (5).

15. (New) The method as claimed in Claim 6, further comprising the steps of:

- (a) maintaining the hydrogen exhaust valve open during a second predetermined period of time after said step (5), and
- (b) closing the hydrogen exhaust valve upon said second predetermined period of time is over.